

## Solving Quadratics - Square Roots: Imaginary Solutions Date\_\_\_\_\_ Period\_\_\_\_

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**Solve each equation by taking square roots.**

1)  $-9 - 8x^2 = -209$

2)  $7r^2 + 8 = 281$

3)  $25m^2 - 8 = -7$

4)  $2n^2 - 5 = -35$

5)  $5x^2 - 3 = -8$

6)  $10b^2 - 10 = -141$

7)  $4n^2 + 1 = 157$

8)  $8v^2 - 6 = -101$

9)  $9x^2 + 8 = -35$

10)  $9n^2 - 5 = -99$

11)  $8 - 6m^2 = -88$

12)  $3p^2 - 4 = -6$

13)  $3r^2 - 5 = -10$

14)  $8b^2 - 1 = -78$

15)  $7x^2 + 5 = -137$

16)  $8n^2 - 5 = -110$

17)  $7v^2 + 6 = -117$

18)  $4x^2 + 4 = -29$

19)  $7k^2 + 7 = -140$

20)  $10x^2 + 7 = -3$

21)  $9a^2 + 3 = -27$

22)  $-4 - 2p^2 = -40$

23)  $7n^2 + 6 = -40$

24)  $1 - 6x^2 = -15$

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**Solve each equation by taking square roots.**

1)  $-9 - 8x^2 = -209$

$\{5, -5\}$

2)  $7r^2 + 8 = 281$

$\{6.245, -6.245\}$

3)  $25m^2 - 8 = -7$

$\{0.2, -0.2\}$

4)  $2n^2 - 5 = -35$

$\{i\sqrt{15}, -i\sqrt{15}\}$

5)  $5x^2 - 3 = -8$

$\{i, -i\}$

6)  $10b^2 - 10 = -141$

$\left\{\frac{i\sqrt{1310}}{10}, -\frac{i\sqrt{1310}}{10}\right\}$

7)  $4n^2 + 1 = 157$

$\{6.245, -6.245\}$

8)  $8v^2 - 6 = -101$

$\left\{\frac{i\sqrt{190}}{4}, -\frac{i\sqrt{190}}{4}\right\}$

9)  $9x^2 + 8 = -35$

$\left\{\frac{i\sqrt{43}}{3}, -\frac{i\sqrt{43}}{3}\right\}$

10)  $9n^2 - 5 = -99$

$\left\{\frac{i\sqrt{94}}{3}, -\frac{i\sqrt{94}}{3}\right\}$

11)  $8 - 6m^2 = -88$

$\{4, -4\}$

12)  $3p^2 - 4 = -6$

$\left\{\frac{i\sqrt{6}}{3}, -\frac{i\sqrt{6}}{3}\right\}$

$$13) 3r^2 - 5 = -10$$

$$\left\{ \frac{i\sqrt{15}}{3}, -\frac{i\sqrt{15}}{3} \right\}$$

$$14) 8b^2 - 1 = -78$$

$$\left\{ \frac{i\sqrt{154}}{4}, -\frac{i\sqrt{154}}{4} \right\}$$

$$15) 7x^2 + 5 = -137$$

$$\left\{ \frac{i\sqrt{994}}{7}, -\frac{i\sqrt{994}}{7} \right\}$$

$$16) 8n^2 - 5 = -110$$

$$\left\{ \frac{i\sqrt{210}}{4}, -\frac{i\sqrt{210}}{4} \right\}$$

$$17) 7v^2 + 6 = -117$$

$$\left\{ \frac{i\sqrt{861}}{7}, -\frac{i\sqrt{861}}{7} \right\}$$

$$18) 4x^2 + 4 = -29$$

$$\left\{ \frac{i\sqrt{33}}{2}, -\frac{i\sqrt{33}}{2} \right\}$$

$$19) 7k^2 + 7 = -140$$

$$\{i\sqrt{21}, -i\sqrt{21}\}$$

$$20) 10x^2 + 7 = -3$$

$$\{i, -i\}$$

$$21) 9a^2 + 3 = -27$$

$$\left\{ \frac{i\sqrt{30}}{3}, -\frac{i\sqrt{30}}{3} \right\}$$

$$22) -4 - 2p^2 = -40$$

$$\{4.243, -4.243\}$$

$$23) 7n^2 + 6 = -40$$

$$\left\{ \frac{i\sqrt{322}}{7}, -\frac{i\sqrt{322}}{7} \right\}$$

$$24) 1 - 6x^2 = -15$$

$$\{1.633, -1.633\}$$